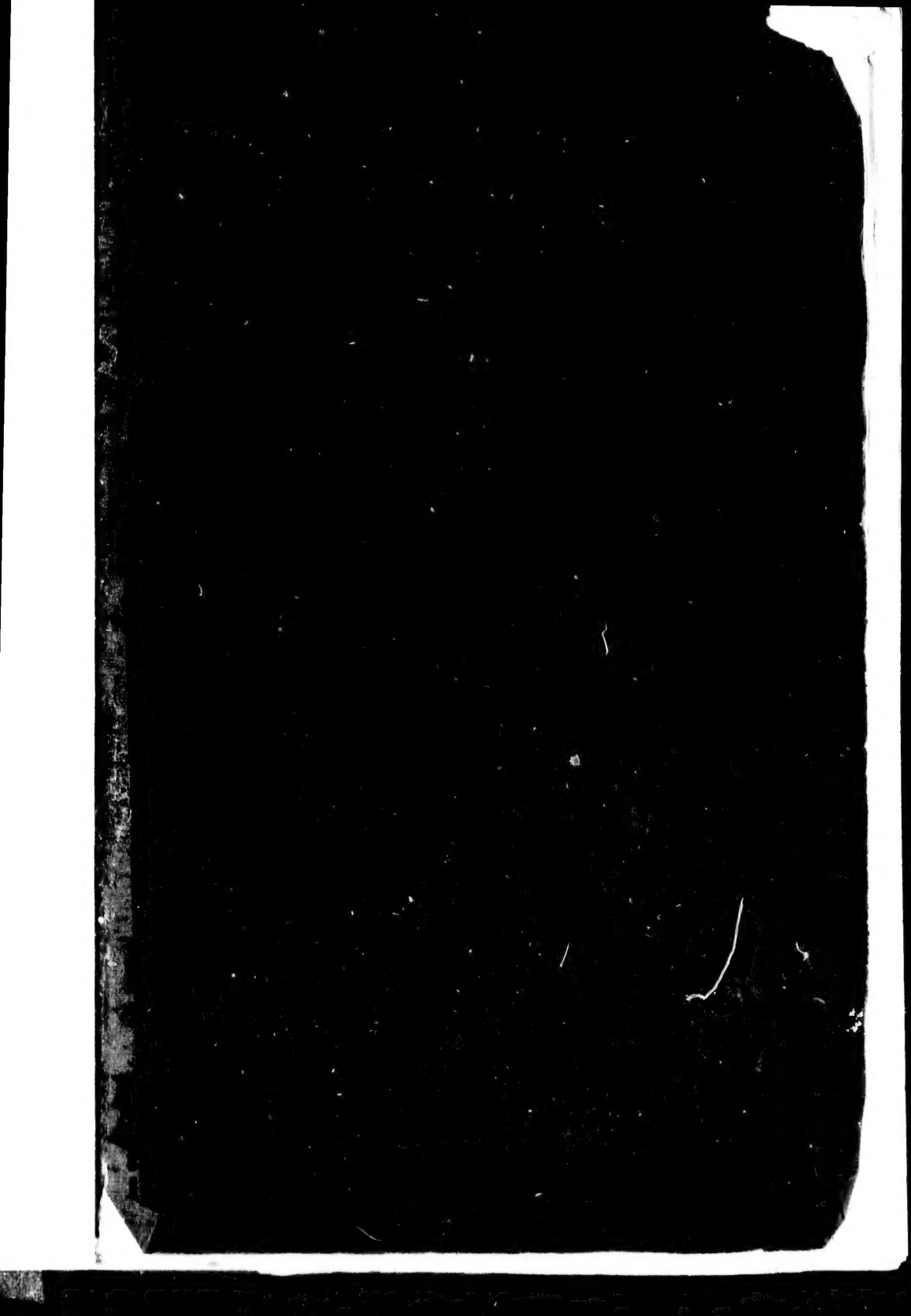




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BRITISH COLUMBIA.

WILLIAMS LAKE AND CARIBOO.

REPORT

ON PORTIONS OF THE

WILLIAMS LAKE AND CARIBOO DISTRICTS,

AND ON THE

FRASER RIVER,

FROM

FORT ALEXANDER TO FORT GEORGE.

BY LIEUTENANT H. SPENCER PALMER,

ROYAL ENGINEERS.



PRINTED AT THE ROYAL ENGINEER PRESS, NEW WESTMINSTER,
BRITISH COLUMBIA.
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ROYAL ENGINEER CAMP,
NEW WESTMINSTER, BRITISH COLUMBIA,
21ST FEBRUARY, 1863.

SIR,

The following report on portions of the Williams Lake and Cariboo districts of this colony, and on the Fraser river from Fort Alexander to Fort George, accompanied by the requisite maps, plans and tables, is respectfully submitted for your information.

If a more detailed description of the character and requirements of so large a tract of country were made, enough might easily be written to fill a moderate volume; therefore nothing beyond a general outline has been here attempted.

I am, of course, prepared, at any time you may desire it, to furnish you with such more specific information, on matters belonging exclusively to the department under your charge, as my memory, aided by a copious note-book, can supply.

I have the honour to be,

Sir,

Your most obedient servant,

HENRY SPENCER PALMER,

Lieut., Royal Engineers.

To

COLONEL R. C. MOODY, R. E.,

Chief Commissioner of Lands and Works,

&c.,

&c.,

&c.

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LIST OF MAPS AND PLANS SUBMITTED
WITH THIS REPORT.

- No. 1. A map of portions of the districts treated of in the Report.
Scale, 5 statute miles to an inch.
- No. 2. A skeleton map of part of British Columbia. Scale, 50
statute miles to one inch.
- No. 3. Sections of some of the trails in Cariboo.
- No. 4. A plan of a portion of the Government reserve at the mouth
of Quesnel river. Scale, 6 inches to one statute mile.
- No. 5. A plan of the Government reserve at Cottonwood. Scale,
6 inches to one statute mile.

N.B.—The ~~two~~ first only have been lithographed.

REPORT.

THE main routes to the upper part of British Columbia which lie to the east of the Fraser traverse portions of the great, elevated table-land bordering the eastern slope of the Cascade range. This table-land may, as a whole, be described as an extensive, slightly undulating, wooded district, dipping very gradually towards the northeast, and drained by the Fraser and its tributaries; its maximum altitude, in the neighbourhood of the mountains, ranges a little on either side of 4000 feet, and its features vary with its geological character.

The country as far north as Lake La Hache, the present terminus of waggon-road communication, will already have become familiar to you from the reports and sketches of others.

From that point to the parallel $52^{\circ} 30' N.$, the trails traverse one of the most favoured known districts of this colony. The table-land, whose general level at this part may be stated at a little under 3000 feet above the sea, is intersected in every direction by numerous broad, sheltered vales, of from 300 feet to 1000 feet in depth, whose slopes present gently undulating surfaces, and are usually scantily timbered with the yellow and other small pines. The vales undulate slightly, are sometimes more or less thickly wooded, and sometimes contain open prairies of fair extent. Both the vales and their slopes, and large portions of the intervening highlands, are nearly everywhere covered with a profusion of rich bunch-grass, and the rocks of the plateau, generally basaltic in character, afford by their decomposition a soil which, in the watered districts, may be pronounced fertile and valuable for agricultural purposes. The vales contain numerous picturesque lakes abounding in fish and water-fowl, and are drained

by streams of small size, which, in the highlands, are generally winding and sluggish, with marshy banks, but, near their mouths, disappear in deep, narrow gorges, and descend with great rapidity into the valleys of the large rivers.

Such as have been here described in general terms are the vales of Mud Lake, Beaver Lake, Alkali Creek, Deep Creek, the San Jose river, and others. Judging from what I have myself seen, and from the assertions of reliable people, I think it fair to state that there is embraced between the parallels $51^{\circ} 40' N$ and $52^{\circ} 30' N$, and the meridian $121^{\circ} 30' W$ and the Fraser a region, some 2000 square miles in extent, beautiful and attractive in many respects, in which the available farming land of the vales may be reckoned by scores, the grazing land of the slopes and plateaux by hundreds of square miles, and only needing settlement to prove its worth.

The altitude of this district is frequently quoted as rendering it unsuitable to agriculture, but the highly satisfactory results obtained at Williams Lake and Beaver Lake, two of the most advanced farms in the colony, where, at an elevation of between 2100 and 2200 feet, varieties of grain and vegetables are yearly raised in great perfection and abundance, indicate at once the fertility of the soil, and the absence of influences materially discouraging to agriculture. There are, in the section of country under discussion, large tracts of unoccupied land, where the soil rivals that of the farms above-mentioned, and where much of the ground is literally ready for the plough.

The main waggon-road to the north was, at the close of last season's operations, open for traffic as far as a spot named Blue Tent, a little beyond the lower end of Lake La Hache. From that point an excellent, almost natural trail, following the fertile vale of the San Jose, leads to the head of Williams Lake. Here the route branches in two directions,—the one branch, which, for purposes of description, will be spoken of as the eastern route, running, *via* Deep Creek farm, in a general northeasterly course to the junction of the north and south branches of the Quesnel river; the other, or western route, continuing past Williams Lake, and following the

Fraser valley to the mouth of the Quesnel. From the Court-house, situated near the foot of Williams Lake, another, for some time the only trail to Quesnel-forks, joins the eastern route at Deep Creek farm.

The portion of the table-land, between Williams Lake and Round Tent Lake, traversed by the EASTERN ROUTE is such as has been above described: the landscape pretty, the pasturage good and abundant, and the road excellent. Beyond the latter place the country becomes inferior in character and beauty. Dense, monotonous forests, most frequently of burnt timber, cover the plateau, and numerous deep *swales* or depressions, reached by steep grades and watered by small lakes and muddy, torpid streams, traverse it in varying northwesterly directions. Fallen trees, stumps, roots and mud-holes everywhere encumber the path, and, though the burnt forests permit, in summer, the constant access of the sunshine and dry currents of air, the tenacity of the soil is such that it is late in the season before the trail becomes dry enough to be fairly passable for traffic.

Where the forest is green,—the case, happily, for five miles only between Beaver Lake and the descent to Quesnel river—even these wholesome influences are excluded, and, in the driest part of the autumn, the trail is but a slippery slough, a series of small, dark, muddy pools, divided only by the little ridges that have been left untouched by the feet of the pack-animals. There are few travellers by this route who do not remember with disgust the abominations of the "Green Timber," and of the mud-holes in the *swales* beyond.

At Beaver Lake there is fair pasturage; thence to the forks of Quesnel river it is very poor and scanty, scarcely deserving the name. Twenty-eight miles from Round Tent Lake, a long descent of 1420 feet in about three miles leads to "Quesnel City," a cheerless cluster of some 50 wooden houses and cabins situated on the tongue of land which divides the branches of the stream. At this river the table-land terminates, and on the right bank is seen an outlying portion of the rugged hills of Cariboo.

The country traversed by the WESTERN ROUTE, as far as Alexander,

presents no features of particular interest, other than were described in general terms at the commencement of this paper, and offers no serious impediments to road-making. Between the Court-house and Soda Creek there are some very steep ascents and descents by the more direct trail, so that, with animals, the detour from the head of Williams Lake by Deep Creek farm is preferable; and there is little doubt that a modification of this latter line will be adopted for the future waggon-road.

Above Fort Alexander the Fraser sweeps in graceful curves, but with considerable velocity, down a broad valley which preserves a general north and south direction for nearly 40 miles. The breadth of this valley, measured between the extreme points where it breaks from the table-land on either side, is from three to four miles. In the neighbourhood of Alexander the large bends of the stream are occasionally occupied by the peculiar level, grassy benches which prevail in many parts of the valleys of the Fraser and its tributaries—a formation due, as many think, to successive sudden degradations of the river level at remote periods, occasioned by the removal of large barriers of rock or other obstacles in the defiles of the valleys. A few miles above the Fort this formation dies out, and with it disappears also the bunch-grass, apparently an inseparable feature of bench lands. Thence northwards continuous, gentle slopes rise from the river to the levels of the table-lands, interrupted here and there by flats of varying extent, and a few prairies of rich meadow-grass and productive soil, already the scenes of incipient farming enterprise. Small brooks, having their sources in the numerous lakes which dot the plateaux, flow to the Fraser in deep, narrow ravines, which will form almost the only serious obstacles to road-making in this part of the country. At these ravines the trail is very bad, but it is otherwise generally fair and level to within seven miles of the mouth of the Quesnel. The river banks and islands abound with cottonwood, and the slopes and flats are plentifully clothed with various descriptions of forest,—the poorer lands and steep hill-sides usually with

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firs and spruces of small size, the poplar, alder, and other deciduous trees prevailing in the rich and well-irrigated soils.

The Quesnel river, a rapid, unnavigable stream, whose southern branch flows from the Great Quesnel, one of the largest lakes in the colony, empties into the Fraser from the southeast about thirty-five miles above Fort Alexander. Its breadth is from 40 to 100 yards, varying at different stages of the water, and passengers cross it in ferry-boats which ply in two places, one at the mouth, the other three miles above; but a horse-boat is much needed, to do away with the inconvenience of unloading and swimming pack-animals. The miniature settlement at the mouth is approached by seven miles of execrable, muddy trail, and, in making a waggon-road over this portion, much careful attention in the matters of draining and broad forest-clearing will be indispensably necessary.

Leaving the Quesnel, which is confined in a narrow, thickly-wooded and unattractive valley, the route to Cariboo runs directly away from the Fraser in nearly an east line, and crosses obliquely, in a distance of about 27 miles, that portion of the table-land* which lies between the Quesnel and Swift rivers. With the exception of numerous beaver-swamps and marshes, and some extensive patches of poplar and willow trees, the whole of this tract is covered with a dense forest of varieties of pine and hemlock of inferior size, growing in a stiff dark-blue clay, excessively fatiguing for animals to travel through, though not soft enough to mire them. The plateau is traversed by low ridges, running generally in north and south directions, and, in the intermediate hollows, sluggish streams flow through deep, black vegetable soils, and offer additional hindrances to the passage of laden animals.

* The expression *table-land* is, perhaps, scarcely applicable to the undulating district under discussion, which contains many considerable swells and depressions, and is, more correctly speaking, intermediate in character between table and hilly country; but its general features present so great a contrast to the abrupt, mountainous region in the immediate neighbourhood that, for purposes of description, it is here spoken of under the former title.

Swift river, a clear-water stream from 30 to 50 yards broad, is reached by a gradual descent, and crossed just above the mouth of Lightning Creek. This river here flows through a spacious valley, containing much good soil, and dotted with prairies of tolerable pasture and patches of evergreen forest; but it is asserted by those who have travelled hence, down the stream, to its mouth, that this favourable character of country terminates six or seven miles below, and is succeeded by narrow gorges, walled in by cliffs and embarrassing slides of rock and sand, from which there is rarely any escape, and which extend without intermission to its confluence with the Fraser.

At the mouth of Lightning Creek, on its eastern bank, a small, thriving settlement has, during the past year, sprung up, named Cottonwood from the abundance of that growth in its neighbourhood, and promising to become, in future seasons, a trading-post and *depot* of some importance. Cottonwood is the last attractive spot the traveller passes on his road to the mines. Here on the western route, as at Quesnel-forks on the eastern, the table-land terminates, and the trail enters within the limits of the Cariboo district, an entirely different description of country.

Of the two thoroughfares which have been thus far described each has its own peculiar advantages, and each will be, when improved, well adapted, in its general direction, for the supply of the portion of the mining region to which it tends. Regarding Richfield as the centre of the present gold district, for its supply I give the preference to the western route, for, although it is about 149 miles from the head of Williams Lake to Richfield by the Cottonwood trail, and but 113 miles by way of the forks of Quesnel river, the extra distance in the former case is, I consider, more than compensated by the superior character of the trails in the latter, and by the quantity and quality of the pasture which borders them.

As an arterial highway through the colony, the western line, as far as the mouth of the Quesnel river, undoubtedly has the superiority. The ascertained north-westerly tendency of the gold-bearing ranges,

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each year becoming more apparent, the bent of the Cariboo mines in the same direction, and the reports of rich discoveries on Peace river at once indicate the policy of adhering to the Fraser valley in the construction of the first main trunk-road, thus avoiding the mountainous country, and admitting of the adoption of steam navigation in suitable places. The latter is found to be practicable between the mouth of *Soda Creek and the mouth of Quesnel river, and already a steamer has been constructed, in readiness to participate in the traffic of future seasons. The application of blasting in the defile just below the mouth of Soda Creek would render the Fraser navigable for powerful vessels from the mouth of the San Jose to the Grand Rapid, a distance of fully ninety miles.

Access from the Fraser to the present Cariboo mines, by the Swift river valley and Cottonwood, will, on a reference to the accompanying map, be at once recognized as undesirable in a geographical point of view. Hence arises a partial explanation of the note on page 26 of my late report on the North Bentinck Arm trail; the difficulties of road-making in the lower part of Swift river valley have been already mentioned. I cannot at present see that the position of the mouth of this stream is possessed of any importance with reference to Cariboo traffic, though, judging from the direction the mines are at present taking, it is far from improbable that trails to the eastward from more northerly points on the Fraser may, ere long, be very desirable.

The mining district has, during the past season, been entered by a third trail, which branches from the eastern route at Little Lake, and, crossing the Quesnel ten miles below its forks, reunites with the main trail near Snowshoe Creek. A good deal of travel took place last season over this, the "Middle Route," attracted, I understand, by patches of pasturage, none of which is found on the north branch of Quesnel river; beyond this I can offer no report on its character. A scheme is said to be on foot for improving a rough trail, which leads from the neighbourhood of Bridge Creek to the

* Erroneously so called, from their being a deposit of Carbonate of Lime on its bed and banks.

mouth of Horsefly river, and navigating part of the Quesnel Lake. A branch from this trail, leading from Horsefly river to Beaver Lake, is said to traverse an attractive line of country, and to shorten the eastern route about thirty miles. These will be alluded to hereafter.

The sections of country that have been thus far briefly spoken of may be embodied under the title the "Williams Lake District," and described as being in a partial state of civilization. Way-side houses exist at suitable intervals along the trails, in which good and wholesome, and, in some instances, even luxurious entertainment, can be had, at prices commensurate with the cost of transport and the consequent value of imported goods in these remote parts. Thus, from Mud Lake and Little Lake southward, a substantial meal cost, last autumn, six shillings; flour averaged in price about twenty-two pence per lb., and good, fresh beef was nearly everywhere to be had at from seventeen to twenty-two pence per lb.

At several of the houses in the southern portion of the district, farms in various stages of progress are met with, those at Beaver Lake, Deep Creek, and the foot of Williams Lake being the most advanced; and the land in the San Jose valley, along the line of the projected waggon-road, is being rapidly seized upon by intending settlers. There are no grounds for hoping that this region will ever be extensively grain-productive, but we may fairly look forward to the time when large tracts of land now lying waste shall have become occupied by stock-raising and agricultural farms, which will supply forage for the pack-animals, and beef and other commodities for the miners in the less favoured districts of Cariboo. At Quesnel-forks barley sold last autumn for two shillings and sixpence per lb; prices such as this should surely give a stimulus to agriculture. Again, the pack-animals, weakened and broken down on the arrival of autumn, must, it is well known, be sent to winter in the less elevated valleys and the milder climate of the lower country; but it is found that some of the favourite wintering posts have an elevation of 1500 feet and more above the sea, and the inference that the strong and healthy cattle of stock farms might, with care, pass the winter in

the Williams Lake district, at an additional altitude of but 800 or 900 feet, seems to be not an unreasonable one. South of Mud Lake the district is inhabited by the Atnah Indians, portions of a widely-distributed though not numerous tribe, which occupies the country to the west of the north branch of Thompson river. They are usually met with alone or in small parties; most of them have horses, and they move periodically about the country in quest of game, fish and berries, the usual diet of the mountain Indians.

Mosquitoes may be said to disappear north of the Quesnel river, but most of the country to the south of it is more or less infested; from them, and from the small black flies and large horse-flies, men and animals receive, during the months of July and August, almost intolerable annoyance.

As far as Beaver Lake on the eastern route, and Round Prairie on the western, the traveller from the south may depend on finding excellent encamping places and good pasturage at reasonable intervals. Beyond these points the natural feed is miserable, and grain or good hay can rarely be purchased. The country does not readily admit of farming, though a few vegetables are here and there raised in fertile patches in the river bottoms, and retailed at astonishing prices.

These remarks close the description of the Williams Lake district. The confines of Cariboo have been reached by each of the two principal routes, and a report on that region will occupy the next section of this paper.

The yellow border on the accompanying map may be taken to fairly define the southwestern and southeastern limits of the district of Cariboo. Any further description of its boundaries is needless, inasmuch as each season's exploration tends to expand the mines further and further in a northerly direction; it will suffice here to represent its southern limits, and to remark that the region partially prospected and inhabited by miners up to the close of last year occupies a rectangle about 1100 square miles in extent (defined on

the map), whose southwestern side is a line 40 miles in length, passing from the neighbourhood of Quesnel-forks, in a northwesterly direction, through Cottonwood. The general tendency of the auriferous ranges throughout the colony leads to the conjecture that future explorations will discover an almost unbroken continuation of rich deposits, maintaining a north-northwesterly direction, and occupying a large portion of the great elbow of the Fraser river.

Cariboo is closely packed with mountains of considerable altitude, singularly tumbled and irregular in character, and presenting steep and thickly-wooded slopes. Here and there tremendous masses, whose summits are from 6,000 to 7,000 feet above the sea, tower above the general level, and form centres of radiation of subordinate ranges. This mountain system is drained by innumerable streams, of every size from large brooks to tiny rivulets, known respectively in mining phraseology as "creeks" and "gulches", which run in every imaginable direction of the compass, and, winding among the valleys and gorges, discharge themselves into the larger streams or "rivers," which at length conduct their waters to the Fraser.

The fall of all these streams is very rapid, and they are subject to excessive increase of volume, from the melting of the immense accumulations of hibernal snow, and from the heavy rains which fall during the summer months. The most remunerative mining is generally found near the head waters of the creeks, in close proximity to the mountain clusters which seem to be the great centres of wealth, and thus some of the less attractive diggings on the rivers and on the lower parts of the creeks have as yet scarcely claimed attention.

Of the superior mountain masses mentioned above, the most familiar are Mounts Snowshoe, Burdett, and Agnes, the latter more generally known as "The Bald Mountain of Williams Creek." These rise in their most elevated parts to a little over 6,000 feet above the sea, and, though not the loftiest, are fair types of the other remarkable clusters in Cariboo. At these high altitudes vegetation becomes scanty, and their summits and the upper parts of their slopes may be described as undulating downs, clothed with

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good pasturage, and widely-scattered groups of undersized firs—hence the well known title, the “Bald Hills of Cariboo.” It would be a hopeless task for me to attempt to convey in detail a fair idea of the impressive nature of the views from the summits of these hills in fine weather—in the foreground the tumbled sea of the Cariboo mountains; narrow, gloomy valleys, forest-clad slopes, and the bleak unwieldy masses of the bald hills, here and there patched with snow—far off to the south and west, the softer outlines of the table-lands—to the east a singularly rugged, inhospitable country, crammed with serrated ranges of hills, and beyond them the snowy ridges of the Rocky Mountains glistening through the pure air from almost incredible distances; scenes such as these, ever varying in detail, reward the traveller in this remarkable region; they should be often seen to be well described, but it would even then be no ordinary task to do justice to their wild grandeur and sublimity.

I scarcely entertain a doubt that the hills of Cariboo are an outlying portion of the Rocky Mountain system, for the connection between them and the distant lofty ridges to the east, whose remoteness establishes their identity as part of the main Rocky Mountain range, appeared to me to be broken by no interval of magnitude, certainly by no extensive tract of table-land or low country.

The most prominent of the mining creeks of Cariboo, mentioned in order of importance, are Williams, Lightning, Jack of Clubs, Antler, &c., and some of the smaller creeks, such as Lowhee, Last Chance and Nelson, have proved very rich. Many others are now well known, some worked and proved, some only “prospected”, and each season’s exploration adds numbers to the list. It will be observed, on an examination of the sketch, that the head waters of many of these streams radiate in a remarkable manner from the bald clusters already described; thus, on Mount Agnes, a small circle of one and a half miles’ radius includes within its limits the sources of Williams, Lightning, Grouse, Jack of Clubs and Antler creeks, streams notorious for the richness of their gold yields; the source of the north branch of Swift river is included within the same limits. Cunningham, Her-

vey, Snowshoe and Keithley Creeks, a second branch of Antler, and the south fork of Swift river take their rise, in like manner, within a small circle on Snowshoe mountain. These hills are composed of metamorphic slate, traversed by veins of quartz which are believed to be of an auriferous nature; and, if it be reasonable to assume that the other unexamined bald hills of the region, similar to outward appearance in geological character, are foci of equal wealth, we may, with like reason, consider Cariboo one of the most inexhaustible gold-fields in the world.

The streams of the southern and eastern portions of the district discharge their waters into the north branch of the Quesnel; their importance in the eyes of miners is, owing to the superior wealth of the recently discovered creeks to the north, rapidly waning. Antler creek is described by prospectors as the main branch of Bear river, flowing into the Fraser near the crown of the great elbow; three streams, viz: Willow river, Sugar and Lightning creeks, convey to the westward the waters of the richest part of Cariboo; the course of the last is well known, the two first are believed to join the Fraser below Fort George. The valleys of the mining creeks are generally narrow, rocky, and thickly-wooded, and frequently swampy. The forests consist of cedar and many varieties of pine of inconsiderable size, and brushwood and fallen logs cause the usual difficulty in travelling.

Richfield, Van Winkle, Antler and Keithley, small, crowded clusters of wooden houses—the three last situated on the creeks whose names they bear—are the packing termini of Cariboo, the *depots* where miners can purchase at exorbitant prices food, clothing and mining tools, and sometimes luxuries. The cramped nature of these localities will prevent their ever becoming towns of any size. The first named is the most cheerful and thriving, and contains the largest number of dwellings, and, from its position on Williams, the most important known creek in the district, is the acknowledged capital of Cariboo; but the region is so closely packed with mountains that I at present know of no central site within its confines that

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that would admit of the growth in future years, of a really large and populous city. On and without the confines, reserves for town-sites have been already made, at Cottonwood and at the mouth of Quesnel river; the importance of the latter is too obvious to require discussion here.

It is difficult to find language to express in adequate terms the utter vileness of the trails of Cariboo, dreaded alike by all classes of travellers; slippery, precipitous ascents and descents, fallen logs, overhanging branches, roots, rocks, swamps, turbid pools and miles of deep mud; these are a few of the disagreeables of a journey through the district such as I performed in the driest part of the autumn, and I cannot conceive what the difficulties must be at the first melting of the snow, and during the subsequent heavy rains. Some of the trails owe their existence to travel alone, others have been partially constructed on emergencies by Government and by private enterprise, but all are execrable, for the simple reason that they have never been properly made. The courses of the eastern and western routes, from Quesnel-forks and Cottonwood respectively to Richfield, may be readily traced, on reference to the map. As far as Keithley on the one hand and Van Winkle on the other, the trails are level as compared with the portions that follow, but between these points, they reach to a grand acme of all that is abominable. The only good parts are on the actual summits of the bald hills; even the upper portions of the slopes are, in many places, green, spongy swamps, the head waters of the radiating creeks; and, directly the forest is entered, the more serious evils begin. The trail from Van Winkle to Marmot Lake, the descent to the right bank of Williams Creek, the approaches to Antler from either side, and the hill rising from Keithley must be vividly remembered by all who have journeyed over them; the excessive variations of level are indicated on one of the plans accompanying this paper. These are the main lines of communication; the miners' trails, leading to the diggings on the outlying creeks, can only be travelled on foot.

One of the greatest evils of Cariboo is the entire absence of good pasturage in the lowlands, for, although on the summits and superior slopes of the bald hills there is plenty of excellent pasture-land, the valleys are clothed with dense, grassless forests, broken only by occasional lakes and beaver-swamps, fringed with poor, innutritive feed. Hence it is not to be wondered at that animals, arriving on the borders of Cariboo weakened already by two or three days' absence from bunch-grass, soon succumb to want of food, and to exhausting journeys over the vilest imaginable trails. The most loathsome, if not the saddest sights that greet the traveller in this region are the numerous carcasses of horses that have been thus literally tired to death, and generally left to rot where they fell. Good mules are rarely seen in Cariboo, they are too valuable to be thus sacrificed by the score, and seldom pass to the north of the Quesnel river; cheap, hardy Indian horses are preferred by the packers, both for economy's sake and for the greater facility with which they traverse swampy ground; but it is a common occurrence for a laden train of these horses to start from the mouth or the forks of Quesnel for the interior of the mines, and to return with but half, or even less, of their number.

It is of course impracticable for the Government to follow with expensive trails closely on the rapid and wandering steps of the miners, but I beg to testify to the grave importance of at least one good arterial trail through the mountainous, grassless mining regions north of the Quesnel. If facilities be afforded in this district for the rapid performance of journeys by pack-animals, a reduction in the prices of provisions—the result of all others the most desirable—will be at once attained, and I think it no exaggeration to say that, with good trails, the packer would perform three journeys in the time it now takes him to perform one. Thus the periods of the animals' absence from good feed would be shorter, and the increased facilities for transport would admit of their being supplied with a small amount of barley for the journeys through the mountains. I may observe, in

proof of the urgent necessity for improved trails in and near Cariboo, that, while transport from Lillooet to Alexander, a distance of some 200 miles, cost, last autumn, about 35 cents (17½d.) per lb, it was difficult to get packers to carry goods from Alexander to Richfield, a distance of but 107 miles, for 50 cents (2s. 1d.) per lb.

The importance of the matter here urged must, of course, have been ere this obvious to you, and from the steps towards the improvement of a central line* that have been already taken, it is evident that the Government recognizes its immediate necessity. The inferior wealth of the creeks along the southeastern border of Cariboo, and the consequent thinner mining population in that part, have less urgent claims for the helping hand of Government. The efforts of private individuals, alluded to in an earlier part of this paper, viz: the construction of the "Middle Route," and of the trails from the neighbourhood of Bridge Creek to Beaver Lake and Quesnel Lake, respectively, are alike beneficial to the miner and to the country: by them new tracts of country are opened up, and new lines of pasturage made available, and their tendency to facilitate and expedite traffic must result in a diminution of the prices of transport. The road system now being pursued will, if carried out, open up one important main waggon-line on the western route for the supply of the richest and most largely populated creeks of Cariboo; the other trails to the south, and the eastern route to the north, of Williams Lake, with their branches, may continue to furnish, by means of pack animals, supplies to the comparatively unimportant district south of Antler.

The inclemency of the climate of the mining regions of Cariboo, due more directly to their great elevation, must be a subject for regret, and it is singularly unfortunate that the season most favourable to mining, extending from June to September inclusive, is usually, from such accounts as we can gather, the wettest part of the

* Government notices for tenders for the construction of a Waggon-road from Alexander to Cottonwood, and of Bridle-roads thence to Richfield and Antler, dated 22nd of January, 1863.

year, a fine interval of three or four weeks in August alone excepted. No reliable meteorological statistics have as yet been obtained, but, from the testimony of those who spent the winter of '61-62 in the mines, we learn that the first heavy snows at the settlements fell in October, and were succeeded by a partial thaw. The winter and spring weather seems to have been a succession of severe snow-storms and fine, clear intervals, until at length, towards the close of May, the regular thaw commenced, and was soon followed by the incessant, drenching rains of the mining season. The maximum depth of snow in the valleys, at a height of some 4000 feet above the sea, was about six feet—on the hills of course much greater.

Viewed under the most favourable circumstances of weather, and with the accessories of such comforts as can late in the season be obtained, Cariboo, though singularly healthy, is at best but a cheerless, inhospitable region, possessing no attraction but its mines. I no longer wonder at the large exodus of last year, when, in spite of the allurements of wealth, hundreds of inexperienced immigrant gold-seekers turned back, dismayed at the climate, the rugged country, the obstructive trails, the scanty and expensive food, and their own ignorance of skilled mining. The indomitable pluck and perseverance of the "prospectors," the hardy pioneers of the mines, can only be appreciated by those who have paid a visit to Cariboo.

The "caribou," (a species of reindeer from which the region derives its name) the marten, the marmot and other animals frequent the mountains and valleys, and are hunted in winter, for the sake of their skins and their meat, by the Carrier Indians, who emigrate thither from their summer abodes on the large lakes and rivers.

The gold of Cariboo is not easily obtainable, and a knowledge of practical mining, shafting, tunnelling, and drifting is necessary to those who desire to work to advantage. The richest deposits are found in the existing and in the old channels of the creeks, down close to the rocks *in situ*, called in mining language "bed rocks," which in Cariboo are talcose slates. From the apparent

centralization of wealth in the bald mountains arises the popular theory among miners that the quartz veins of those hills will be found to be the origin of the gold of the creeks. Although the geological question, as to whether the accumulations of superficial matter containing gold are due to the disintegration and denudation of the rocks from causes such as are now in operation, or to cataclysmal action, seems to be an undecided one, the almost granular form of the gold found in quartz veins is a fact that goes far to shatter this supposition on the part of the miners that the large nuggets of the creeks of Cariboo can be derived from veins of that nature.

I should be trespassing beyond my province, were I to attempt to describe the mechanical methods by which the gold is extracted from the earth, or to furnish statistics of the populations and yields of the various mining creeks; subjects such as these claim the attention of the Gold Commissioners. But I beg permission to contribute my testimony to the extraordinary auriferous wealth of Cariboo, and, in very few words, to clear up a point upon which an uninitiated person is likely to be misled, viz: the nominal yield of a "claim."

A miner's claim occupies a piece of ground 100 feet square. When a creek has "prospected" well, it is usual for miners to form themselves into companies of from four to eight, or upwards, to take up their claims (for each man 100 feet square) in proximity to one another, and to work the whole ground thus claimed for the benefit of the company. If rich "pay-dirt" be struck, and the mine be in a sufficiently advanced state, companies, anxious to obtain the greatest possible quantity of gold in the shortest possible space of time, will frequently employ additional working hands, and work during the whole 24 hours. The wages given last season were £2 for the day of 12 hours. By these means extraordinary yields are sometimes obtained, and instances were known last autumn of as much as 250 oz. (about £800 sterling), or even more, being "washed up" by some of the richest companies on Williams Creek, as the result of 24 hours' labour. Thus, although this sum, subject to de-

ductions for the hired assistance, was divided among the four, six, or eight lucky proprietors, as the case might be, it must be remembered that it was due to the labours of probably double the number of men, and that the dividend thus declared should not, in such instances as these, be taken as indicating the direct result of one man's work. Cases occur of rich "pockets" of gold being struck, and incredible sums being rapidly extracted by simple means and at no extra expense; these are exceptions.

The leading physical and topographical features of Cariboo have now been briefly reviewed. It is my duty, before closing this section, again to urge the imperative and immediate necessity for the improvement of the trails in Cariboo, upon which so much that is vital depends. To carry out these measures, if they be not done by contract, it will of course be essential that properly qualified men be early this year on the spot, provided with the necessary authority, and in readiness to prosecute the works by means of such labour as will no doubt be obtainable at the hands of the too early immigrants. The immediate superintendence of the construction of roads or trails in a country so rugged as Cariboo will require the careful and exclusive attention of experienced and skilful men. I take this opportunity of recording the fact that, although it is two and a half years since the wealth of the Cariboo Gold-fields became known, no officer or other member of this Department has yet visited the region armed with any authority whatsoever in the matter of roads; my own hasty trip through the mines was made for purposes of general examination only.

A description of the character of the Fraser between Fort Alexander and Fort George, and its facilities for navigation, will occupy the concluding paragraphs of this paper.

Between the 53rd and 54th parallels of latitude, there are two serious obstacles to the navigation of the Fraser, viz: the Grand Rapid and the Isle de Pierre Rapid, respectively 24 and 82 miles above the mouth of the Quesnel.

At the former, the river, contracted to about 100 yards in width, roars for a quarter of a mile through a narrow, rocky chasm, overhung by cliffs of ferruginous clay-slate; a portion of the channel is obstructed by numerous large rocks, one of which, near the lower end of the rapid, is conspicuously dangerous.

The second obstruction, the Isle de Pierre Rapid, owes its name to an archipelago of small, rocky islets which stud the stream, here about a quarter of a mile in breadth. These islets rise abruptly from the water's edge, some in isolated spires and columns, others in rugged, massive blocks, crowned with timber and presenting perpendicular cliffs 40 or 50 feet in height. Through the deep, winding chasms, and over the shallow, rocky ledges of this archipelago, in all about three quarters of a mile long, the waters of the Fraser rush with fierce velocity, and form perilous eddies and whirlpools in abundance.

The positions and characters of the dangers in a rapid vary so at different stages of a river, that it is useless to suggest, or to speculate upon the merits of, any especial design for overcoming obstructions, without having previously observed the condition of the channel at all seasons. I can imagine that it will be just *possible*—by blasting, building tow-paths, &c.—so to improve the Fraser at these two rapids that powerful steamers *may* be able to pass up them, but the downward passage must, in my opinion, be, under any circumstances, fraught with imminent danger. In other respects, the Fraser, as far as Fort George, presents no material impediments to continuous navigation by powerful light-draught vessels, at the seasons when the stream is free from ice. Large, isolated rocks are here and there seen, and the water rushes in places, with heightened velocity, over shallow, gravelly bars, but the rocks may be avoided, and the great volume of the river ensures at least one channel deep enough for small, flat-bottomed steamers.

Between Alexander and the Grand Rapid the Fraser winds very much, and the remarkable double bend at Kokope, where, after seven miles' paddling, the traveller is less than a mile and a half in

a direct line from the point he left, is the most extraordinary feature of its course. The banks are here and there crumbling cliffs of sand and sandstone, of as much as 300 feet in height, which frequently slide away from the mainland in immense masses, and obstruct and alter the channel of the river. The cliffs assume numberless fantastic shapes, of which the most remarkable are sharp-pointed pinnacles, left standing in isolated positions by the disintegration of neighbouring masses. High up above the river, on the faces of the steep cliffs, as many as two or three hundred of these *quasi* minarets, some with but one spire, others with two or even three, may sometimes be counted in a single cluster, stained with every variety of red and ochre tints, and contrasting prettily with the dark green of the forests above which they rise. Many-coloured strata of clays and clay-slates occasionally crop out on the river banks, and a large stratum of lignite, of some small value as fuel, is to be seen on the left shore just above the head of Diamond Island. From Alexander to the Grand Rapid the rate of the current may be said to vary, at seasons and in places, from four to seven miles an hour, the portion of the stream above the Quesnel being swifter than that below. The river, with its *sleughs*, varies from 400 to 1000 yards in width, sometimes running in a deep, regular channel, at others spreading out over numerous shallow bars, and amongst archipelagos of cotton-wood islands. Bench-lands and bunch-grass disappear altogether above the Narcoslee, and give way to an undulating forest country, and, north of the Quesnel, the uniform outlines of the table-lands are missed, and the valley is bounded by irregular and widely-separated ranges of hills.

Above the Grand Rapid, material changes in the character of the Fraser are visible; its current becomes less swift, its course straighter, and its waters less widely distributed than before; dense, green forests shade its banks, the valley contracts in breadth, and low, unbroken chains of hills rise gently from either margin of the stream. Eighteen miles above the rapid, the mouth of West river, a tributary, some 80 miles in length, which drains part of the great western

plateau, is passed. Abrupt mountain masses of about 1200 feet in height mark its confluence with the Fraser; these soon die away, and from thence to Fort George an extensive, rolling, forest country is traversed, through which the river winds in a slight depression, scarcely, in this colony of mountains, deserving the name of a valley. Two streams, each about 30 yards in width, enter the Fraser from the east between the Grand and the Isle de Pierre Rapids. The mouth of the one is forty, of the other fifty-five, miles above the former. These may be reasonably taken to be Willow river and Sugar creek, streams which have been already mentioned in the remarks on Cariboo; the supposition that they are so is strengthened on observing the general northwesterly courses of the other large eastern tributaries in these latitudes.

At length, 136 miles from Alexander, Fort George, a dreary Hudson Bay Company's trading-post, infested with dogs and Carrier Indians, is reached. The Fort stands on the right bank of the stream, on a sandy eminence surrounded by large, swampy flats containing groves of cotton-wood and small lakes. Half a mile further up, the Fraser divides into its two principal branches, the eastern or main branch, taking its source amongst the snows of the Rocky Mountains, the other branch, the Stuart river, draining a large tract of country to the northwest. At their confluence these streams appear to be about equal in volume. Unlike the main branch, the Stuart passes on its course through many large lakes, and deposits in them most of the alluvium with which its waters are charged, arriving at the Fraser in an almost clear state. The temperature of the Stuart, on the 29th of September last, was $49^{\circ} 90$ Fahrenheit—of the Fraser $44^{\circ} 20$, the thermometer in the air standing at $45^{\circ} 50$. The canoe journey up was performed by poling along the shores, and occupied 56 hours, travelling time. The descent, in the strength of the current, was accomplished in 17 hours.

Fine gold is found on the "bars" of the Fraser all the way up, and small encampments of Chinese miners were frequently passed; whites keep Cariboo to themselves, and leave to the Chinamen an

undisturbed monopoly of the poorer gold deposits on the Fraser, and its tributaries, the Quesnel and Swift rivers.

We learn now that diggings of almost fabulous richness have been struck on Peace river, in the heart of the Rocky Mountains, a little below the junction of its north and south branches. They are at present reached by the Hudson Bay Company's route, which, leaving Fort George, passes 120 miles up the Stuart to Fort James; thence by an easy "portage" of 90 miles to the head waters of the Peace river, and 130 miles down its stream to the mines.

Thus the gold has been traced to the far off confines of British Columbia. It has been shewn here that most of the Fraser from Soda Creek to Fort George is easily navigable, and the accounts of travellers assign to the Stuart and Peace rivers equal, if not greater, facilities for navigation between the rapids by which, at widely-separated points, their evenness is broken. The remoteness of the new mines, and the difficulty of reaching them, scarcely warrant an expectation of an immediate "rush" thither; but those who take an interest in the future of this country must look forward with pleasure to the time when this northern region shall become subdued to the requirements of civilization, when the large and distant inland streams shall be navigated by steamers in long, if not in unbroken, lines, and the merits of extensive, and at present comparatively unknown, districts be laid open to appreciation by the colonists.

I have the honour to be,

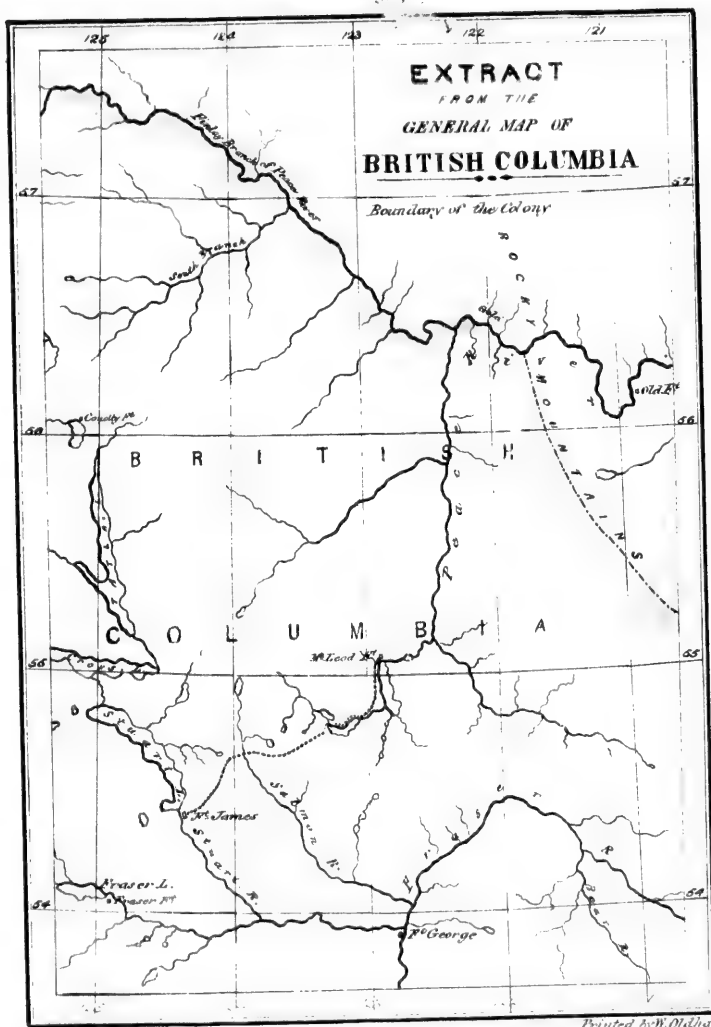
Sir,

Your most obedient servant,

HENRY SPENCER PALMER,

Lieut., Royal Engineers.

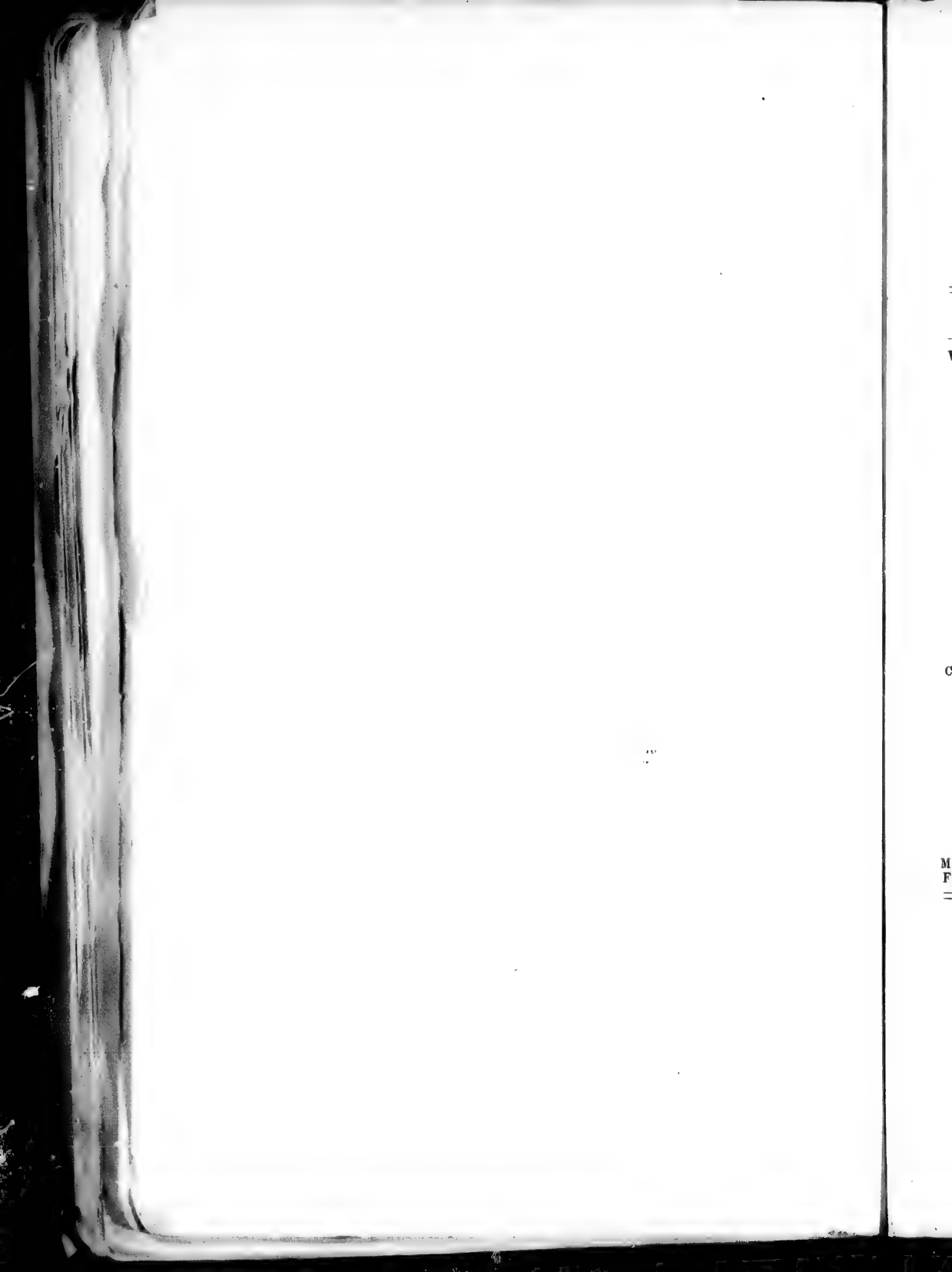
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Drawn by H. B. R. R. E. Camp New Westminster 21st Feb 1863. Printed by W. Oldham S. B.

SCALE. Five Miles One Inch 50 Miles

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TABLE I.

SHEWING THE APPROXIMATE ASTRONOMICAL POSITIONS OF SOME
PLACES IN BRITISH COLUMBIA.

ASTRONOMICAL STATION.	MEAN LATITUDE.	APPROXIMATE LONGITUDE.
WILLIAMS LAKE DISTRICT.		
Encampment at Bridge Creek house	51° 39' 02" N.	121° 24' 58" W.
" West end of Lake La Hache, (Captain Parsons, R. E.)	51 51 50 ..	121 44 10 ..
" Crossing of Deep creek, (south)	52 00 40 ..	121 57 09 ..
" Court-house, Williams Lake	52 09 24 ..	122 13 32 ..
" Crossing of first stream south of Soda Creek	52 19 24 ..	122 17 04 ..
" Crossing of creek, 8 miles below Alexander	52 28 17 ..	122 23 24 ..
" Fort Alexander	52 33 40 ..	122 26 56 ..
" Phillips' Farm, Round Prairie	52 47 57 ..	122 23 49 ..
" Mouth of Quesnel river, upper ferry, (Cock's house)	53 00 17 ..	122 27 06 ..
" Mouth of Quesnel river, lower ferry, (Danielson's house)	52 58 15 ..	122 26 52 ..
" Cameron's farm, 12 miles from Cottonwood	53 01 38 ..	122 14 28 ..
" Beaver Lake, Sellers' hotel	52 29 19 ..	121 55 04 ..
" Forks of Quesnel river, centre of settlement	52 39 42 ..	121 42 52 ..
CARIBOO DISTRICT.		
Encampment at Cottonwood settlement	53 00 33 ..	122 05 07 ..
" House at Beaver Pass, Lightning creek	53 03 58 ..	121 52 49 ..
" Court-house, Van Winkle set- tlement	53 01 31 ..	121 44 42 ..
" Court-house, Richfield do.	53 03 09 ..	121 33 55 ..
" Marmot Lake	53 00 25 ..	121 35 33 ..
" Antler Creek settlement	52 58 44 ..	121 26 22 ..
" House (Leon's) on Snowshoe mountain	52 55 00 ..	121 27 22 ..
" Keithley Creek settlement	52 45 21 ..	121 28 32 ..
Mouth of Swift river	53 07 39 ..	122 28 34 ..
Fort George	53 53 29 ..	122 45 01 ..

H. S. P.

TABLE II.

SHewing THE APPROXIMATE ALTITUDES ABOVE THE SEA OF SOME
PLACES IN BRITISH COLUMBIA.

STATION.	APPROXIMATE HEIGHT IN FEET ABOVE THE SEA LEVEL.
CENTRAL DISTRICTS.	
Boston Bar settlement,	472
Court House at Lytton,	780
Thompson river, at mouth of Nicola river,	788
The Lakes, Venables',	2170
Ashcroft farm, Cornwall's,	1508
Buonaparte river, at mouth of Maiden Creek,	1905
Summit altitude of trail from Green Lake to Bridge Creek,	3660
Bridge Creek house, (Captain Parsons, R. E.)	3086
Lake La Hache, (do. do. do.)	2488
Deep Creek (south,) at the crossing,	2255
Court-house, Williams Lake,	2135
The Springs farm,	1850
Soda Creek crossing,	1690
Mud Lake,	2075
Fort Alexander, Fraser level,	1420
Summit altitude of trail from Mud Lake to Beaver Lake,	3300
Beaver Lake, Sellers' Hotel,	2110
The "Green Timber," South limit,	2880
Little Lake house,	2535
Summit of trail thence to Quesnel-forks,	3375
Quesnel City,	1958
Mitchell's bridge, north branch of Quesnel river,	2120
CARIBOO DISTRICT.	
Cariboo Lake,	2566
Snowshoe Creek, Leon's house,	4920
Snowshoe Peak,	6130
Snowshoe Mountain Leon's house,	5844
Antler Creek settlement,	4010
Milk Farm, Malony's,	4490
Summit of trail over Mount Agnes to Lightning Creek,	5850
Marmot Peak,	6310
Marmot Lake,	5540
Richfield Court-house,	4216
Van Winkle Court-house,	3654
Cottonwood,	2530
Fraser river, at mouth of Quesnel river,	1490
" mouth of Swift river,	1530
" Fort George,	1690

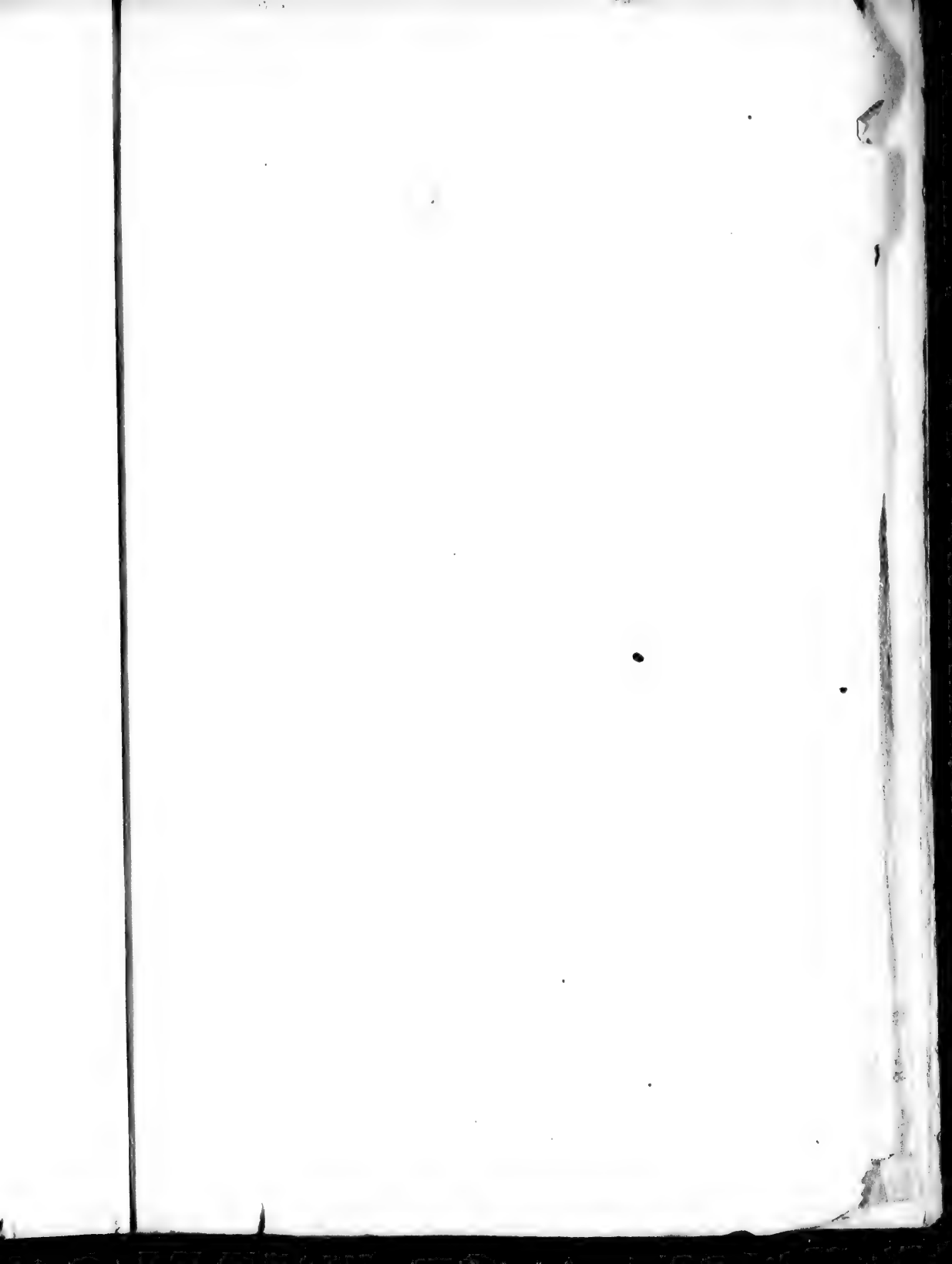
H. S. P.

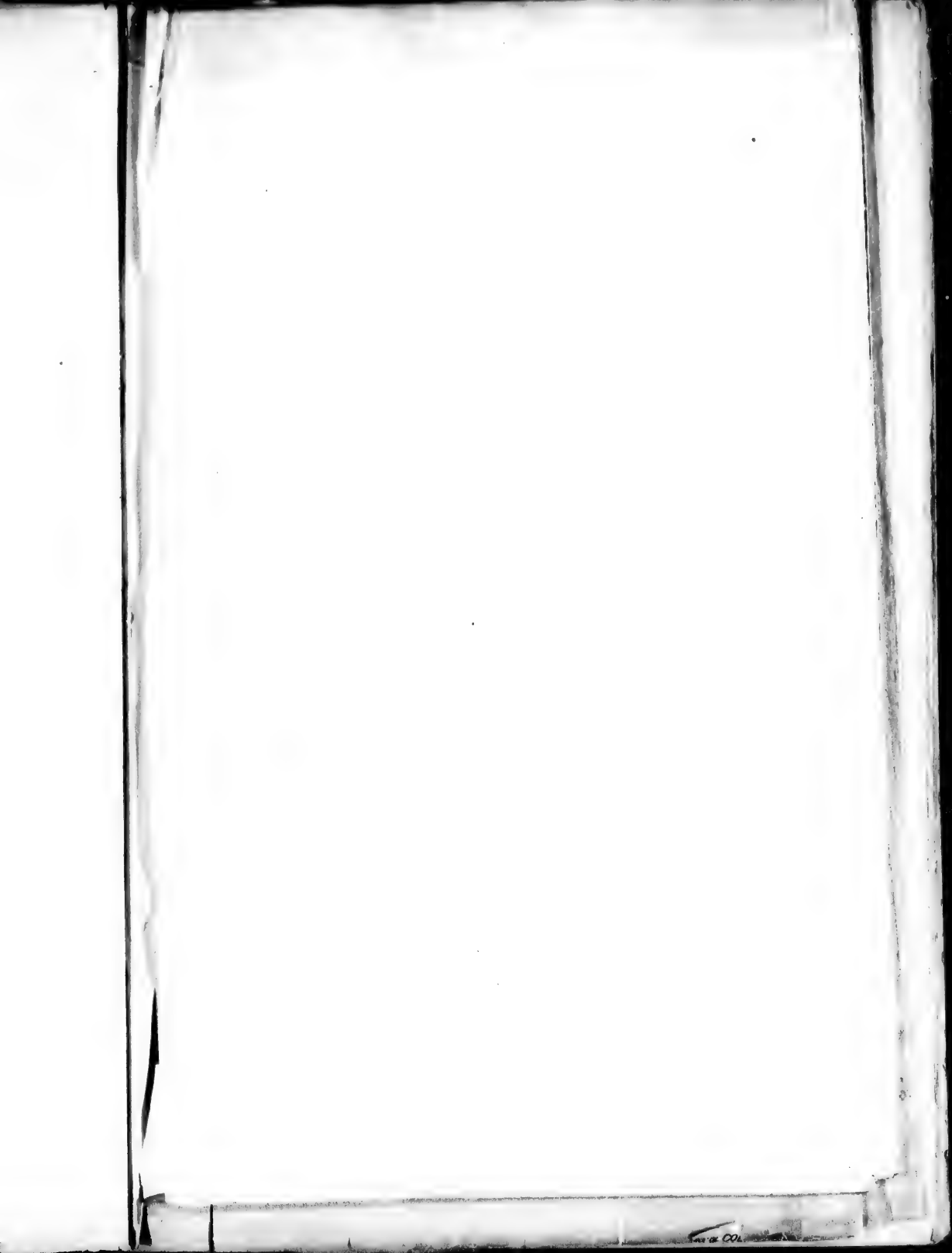
TABLE III.

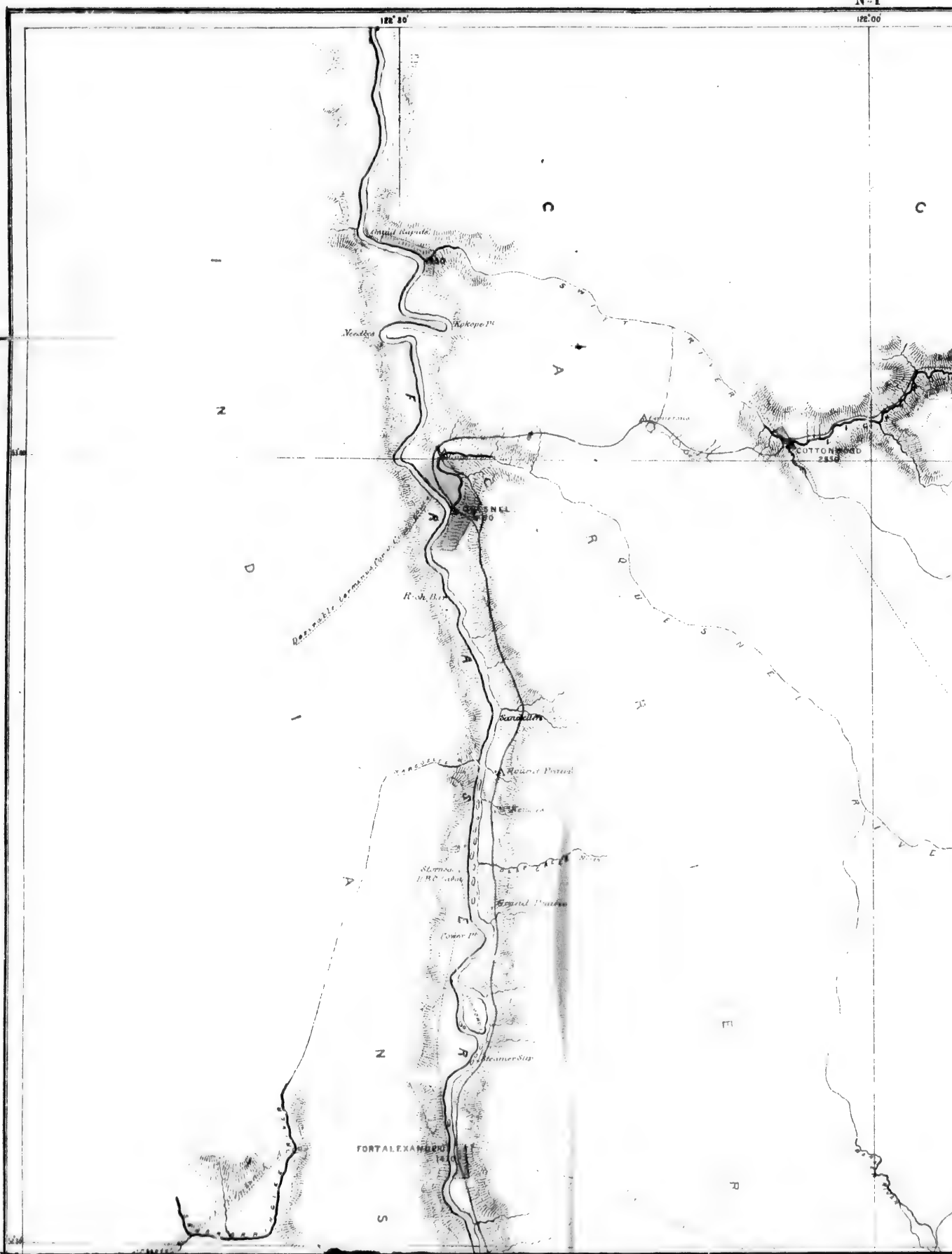
SHewing THE ESTIMATED DISTANCES BY THE EXISTING MAIN ROUTES
BETWEEN VARIOUS PLACES IN BRITISH COLUMBIA.

	MILES.
From the foot of Lake La Hache to the head of Williams Lake,	25
EASTERN ROUTE.	
From the head of Williams Lake to Round Tent Lake,	32
" Round Tent Lake to Beaver Lake,	8
" Beaver Lake to Little Lake,	16
" Little Lake to Quesnel forks,	7
" Quesnel forks to Mitchell's bridge,	7
" Mitchell's bridge to Keithley,	12
" Keithley to Antler,	21
" Antler to Richfield,	10
	—113
WESTERN ROUTE.	
From the head of Williams Lake to the Court-house,	9
" the Court-house to Mud Lake,	20
" Mud Lake to Alexander,	17
" Alexander to the Round Prairie,	19
" the Round Prairie to the mouth of Quesnel river,	16
" the mouth of Quesnel river to Cottonwood,	27
" Cottonwood to Van Winkle,	25
" Van Winkle to Marmot Lake,	10
" Marmot Lake to Richfield,	6
	—149
FRASER RIVER.	
From Alexander, to the mouth of the Narcoslee river,	20
" Narcoslee river to the mouth of Quesnel river,	13
" the mouth of Quesnel river to the mouth of Swift river,	21
" the mouth of Swift river to Grand Rapid,	3
" Grand Rapid to the mouth of West river,	18
" the mouth of West river to "Isle de Pierre" Rapid,	40
" "Isle de Pierre" Rapid to Fort George,	21
	—136

H. S. P.







Wild Mountainous Country



FORTALEXANDER

REFERENCES

Pack Trails, main and branch.	
Approximate Altitudes above Sea, in Feet.	2488
Minami Indian and other Trails.	
Settlements.	RICHFIELD
Wayside Houses.	
Astronomical Stations.	
Coal districts.	
Practicable for Steam navigation.	
Wagon Roads.	
Government Reserves.	



SKETCH
OF PART OF
BRITISH COLUMBIA

BY LIEUT^H H. S. PALMER, R. E.

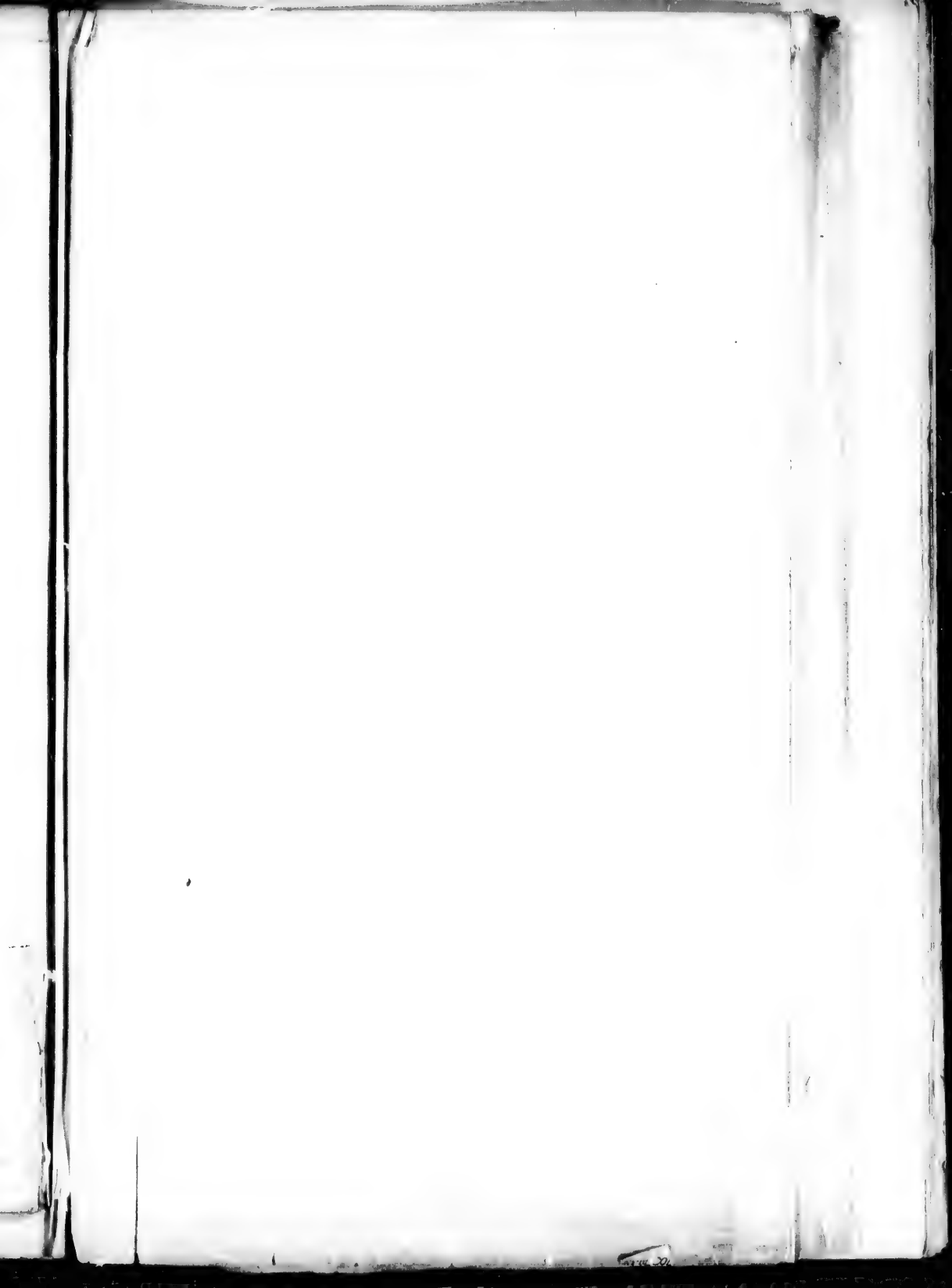
TO ACCOMPANY REPORT OF 21ST FEBRUARY, 1863.

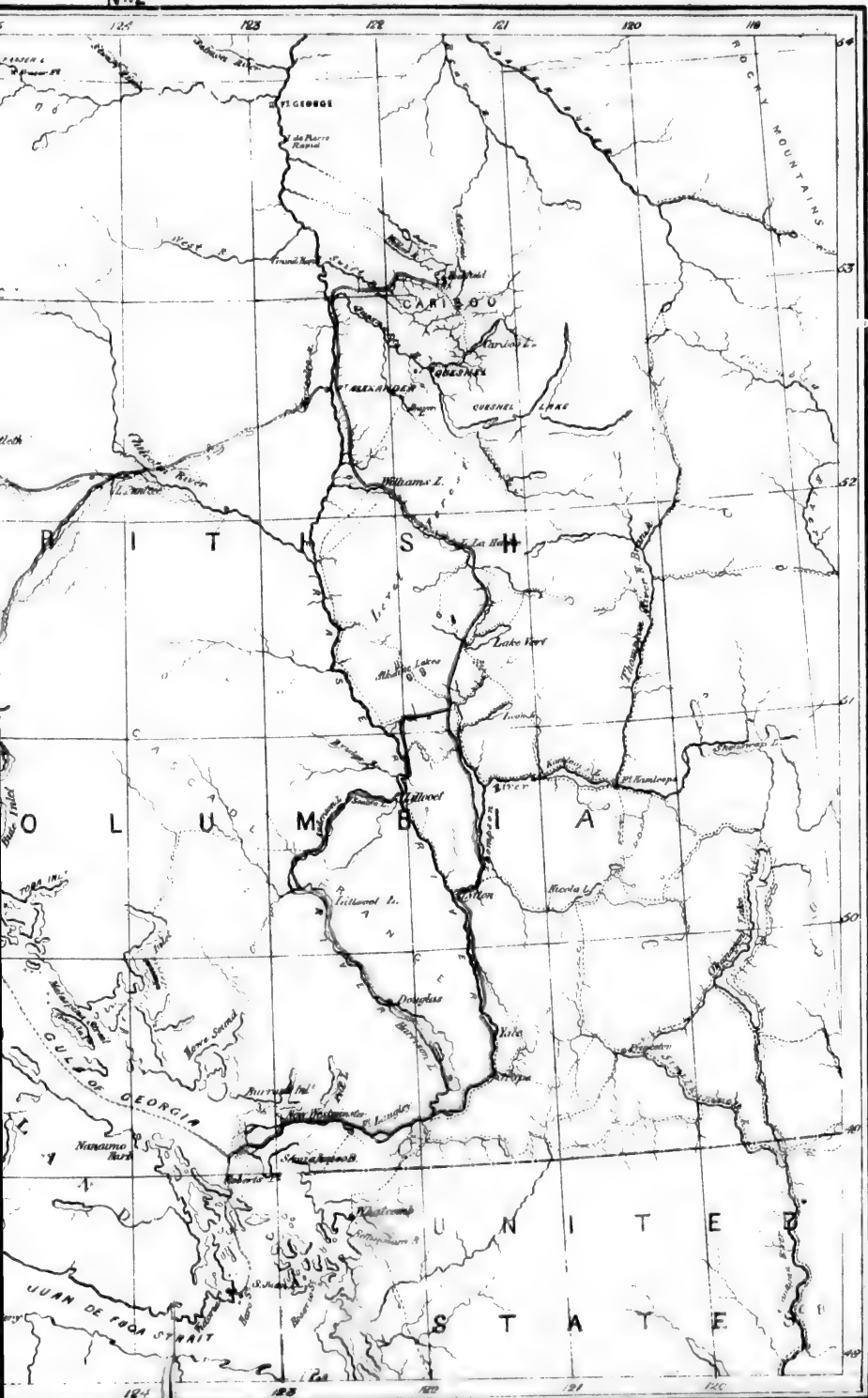
SCALE



5 Statute Miles to One Inch

Trail towards Bulkley R. and Bulkley L.





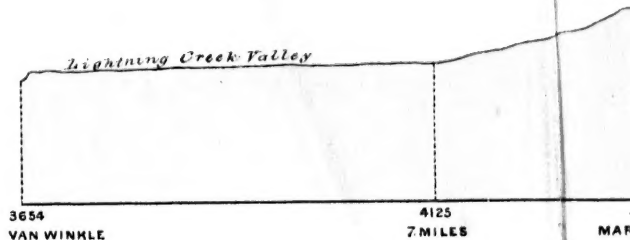
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ANTLE

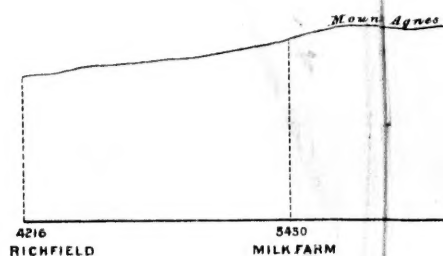
MALE 1 2 0

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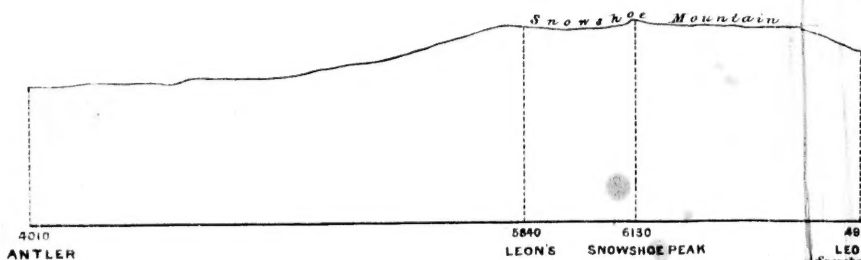
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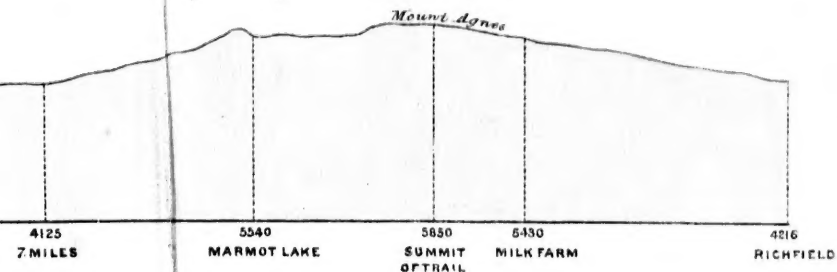


HORIZONTAL SCALE 10000 FEET TO ONE INCH.

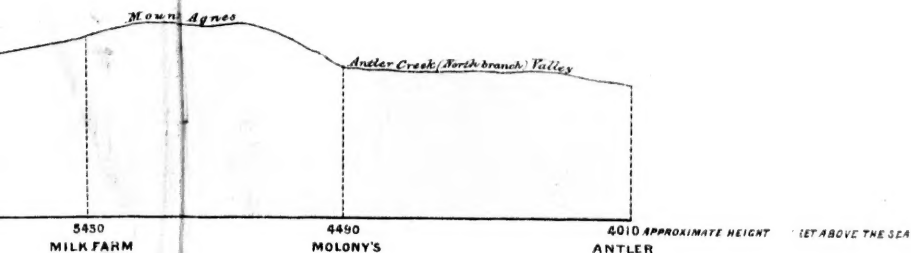
BRITISH COLUMBIA.

PROFILES OF SOME OF THE TRAILS IN CARIBOO.

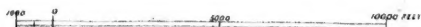
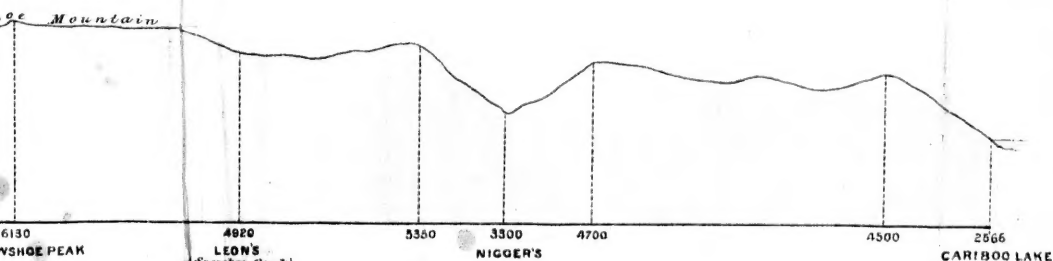
VAN WINKLE TO RICHFIELD



RICHFIELD TO ANTLER



ANTLER TO KEITKEY (CARIBOO LAKE)



VERTICAL SCALE 5000 FEET TO ONE INCH